ner, or what is commonly call'd, the muſcular Coat of the Artery: which terminating here, the Tumour immediately encreas'd to 2 Inches in Diameter, and continued of that Dimenſion, till it came out at the Neck, between the Clavicles; but then extended it ſelf circularly to a Diameter of above 3 Inches, the Covering of which was nothing elſe but the outer Coat of the ſame Artery all along dilated from the Baſe, even to the Extremity of the Tumour.

The Cavity was for the moſt Part fill'd with a Sort of *Polypus*, or *Sarcoma*; in which nevertheleſs there were three Sinuſes, or Paſſages, that were kept open by the conſtant Influx of the Blood, and communicated near the *Apex* with one another; (that in the Middle being the largeſt,) and terminating in one towards the Extremity of the Tumour, not far from where it broke.

Such was the State of the Aneuryſm in this Subject, what it may be in others, future Enquiries muſt determine.

V. *Some Obſervations on* Aneuryſms *in general, and in particular, on the fore-going. By* F. Nicholls, *M. B. Præl. of Anatomy,* Oxon. *&* *F. R.* S.

AN Aneuryſm is by all Authors defin'd to be a ſoft circumſcrib'd Tumor, in which there is a ſenſible Pulſation, cotemporary with the Pulſation of the Artery, to which it adheres. As it is certain, that any Tumor of what Kind ſoever, lying on, or adhering to any

any conſiderable Artery, muſt neceſſarily be moved by every Pulſation of ſuch Artery, ſo this Pulſation (unleſs underſtood in ſuch Manner as I ſhall hereafter explain) can no ways be admitted as the true Diagnoſtick, whereby to ſpecify the Difference between this Kind of Tumor and any other.

An Aneuryſm is found moſt commonly to ſucceed Falls, Vomitings, Labour-ſtrains, and ſuch other Motions or Indiſpoſitions of the Body as, by compreſſing the great Branches of an Artery, any ways ſtop the progreſſive Motion of the Blood.

It is obvious that, as the Section of the Artery above the Compreſſure muſt in its natural State be ſometimes very incapable of containing at once the whole Quantity of Blood, which ought only to have paſs'd thro' it ſucceſſively; and as the Force of the Heart may frequently exceed the Reſiſtance it may meet with from the Coats of the Artery; ſo the Conſequence of ſuch a Stop to the progreſſive Motion of the Blood, may occaſion either a ***Rupture*** of the Artery, or a ***Diſtenſion*** of the Artery without a Rupture, or a ***Rupture*** of the ***internal*** Coats of the Artery, and a ***Diſtenſion*** of its ***external*** Coat.

A Rupture of the large Branches of the ***Aorta*** neceſſarily allow ſo plentiful Effuſions of the Blood, as to occaſion immediate Death; while the Capillaries may be burſt without any other Injury, but a ſlight ***Echymoſis***, and the Tumor form'd by the Effuſion from them will be diffuſed and ſuperficial.

A Rupture of the mean Branches (ſuch I intend, as deſcend between the ***Tibia*** and ***Fibula***, the ***Radius*** and ***Vlna***, &c.) will be attended with a conſiderable Effuſion of Blood; but as the Blood will find a Paſſage between the Interſtices of the Muſcles, it will never form a circumſcrib'd Tumor. However, the Effuſion being continued *per ſaltum* thro' the ruptur'd Artery, will give a faint Pulſation, and conſequently ſome Reſemblance of the Aneuryſm; for which Reaſon it is by ſome Chirurgeons term'd a Baſtard-Aneuryſm.

Whether or no an Aneuryſm be a Tumor form'd by the *Dilatation* of the Artery, or by a ***Rupture*** of the ***internal*** Coats of the Artery, and a ***Diſtenſion*** of the ***external***, has for ſome Time been a Matter of great Diſpute; each Party proteſting (perhaps too unjuſtly) againſt the Poſſibility of the others Opinion.

As to the Poſſibility of an Artery's being dilated, it ſtands ſupported by Reaſon and Autopſy. We find the Uterine Arteries conſtantly encreas'd in Thickneſs and Diameter, in Proportion as the *Uterus* is diſtended; and many Caſes of Palpitations of the Heart have been attended with great Dilatations of the *Aorta*; Inſtances of which I have ſeen both in human and brute Subjects.

Such a Dilatation will neceſſarily follow a conſtant, or frequent Preſſure on any Part of the *Aorta*, provided ſuch Preſſure does not entirely ſtop the progreſſive Motion of the Blood thro' the *Aorta*.

But on the other Hand, ſuch a Dilatation will always retain ſomewhat of the Form of the Artery. The Reſiſtance will not be every Way equal, as in the extravaſate Tumors; becauſe the quaquaverſal Preſſure of the Blood will be controll'd by the Preſſure on the Artery, and the Reſiſtance from the Coats of the Arteries, ſo as neceſſarily to form a Cylindroeid. And the Conſequence of ſuch a Dilatation cannot (if con-

conſider'd abſtractedly from its Preſſures) be worſe (if ſo bad) than from a varicous Vein.

Again, they who conceive an Aneuryſm to be a *Rupture* of *both Coats* of the Artery, oppoſe their Opinion, who imagine the *internal* Coat to be *ruptured*, and the *external* to be *diſtended*, by comparing the two Coats in Queſtion, and urging, that, as the internal Coat is ſo much thicker than the external, it ſeems impoſſible the laſt ſhou'd be ſufficient to reſiſt a Force capable of deſtroying the firſt. Were theſe two Coats *ſimilar* as to their Structure, we might then compute their Strength by their Thickneſs, and this Argument wou'd be of much greater Force than at preſent it can be; becauſe the internal Coat being compoſed of *annular Faſciculi*, whoſe Sides have but a very weak Coheſion, their Power of reſiſting will not be meaſurable by the Strength of thoſe *Annuli*; but by the Force with which they adhere *laterally*. And on the other Hand, the external Coat being compoſed of Fibres *equally interwoven*, and of a quite different Compoſition, it may either exert a greater Reſiſtance, or be capable of much greater Dilatations than the internal.

But that *Autopſy* may evince the Truth of this Difference in the Strength of theſe Coats, it will be found by any one who pleaſes to try the Experiment, that by blowing into the Pulmonary Artery, the internal Coat will ſoon burſt, and the external form it ſelf into aneuriſmous Tumors, (*which Experiment was accordingly try'd before the Society, to their Satisfaction.*)

Upon conſidering all which, and having, by *Order of the Society*, both privately and publickly examin'd the Aneuryſm before us, which I find to be round like other extravaſate Tumors, unleſs when controuled by any

any notable Preſſure, and that the *Sacculus* does not *divide* into *Coats* as the Artery from whence it ariſes *does*, I am induced to think that this Aneuryſm is a Tumor form'd by the Blood's being *forced thro'* the *ligamentous*, or what is called the Muſcular-coat, and *diſtending* the *membranous* or outer one. And becauſe the Impetus of the Blood will, as it were, perpetually preſs thro' the Aperture into the Tumor, and be again (at leaſt in Part) return'd by the Elaſticity of the external Coat; therefore ſuch a Tumor will rather have a *pulſatile* Dilatation, than a *Pulſation*, for its true Diagnoſtick.

VI. *A Letter to Dr.* Halley, *Aſtron. Reg. & F. R. S. relating to a ſurpriſing Shoal of* Pumice-Stones *found floating on the Sea, by Mr.* John Dove.

SIR,

HAving examined my Journal, I ſend you herein a particular Account of what I can remember, concerning the *Pumice-ſtones* we fell in with, in our Voyage to *India* in the *Lyell*, *Charles Small* Commander.

On *Monday the* 22^{d} of *March*, 172$\frac{4}{5}$, at Noon, being in the Latitude 35°, 36′ South, and Longitude 4°, 9′ Weſt, with Variation 3°, 16′, W. we diſcovered ſeveral *Pumice-ſtones* on the Sea; but not expecting any ſuch thing